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ABSTRACT

A study was conducted to examine the needs of military training developers for feedback from the field on the quality of their products and ways that these needs can best be served. Thirty division and branch chiefs from the Directorate of Training Developments (DTD) at a large center/school were interviewed concerning their feedback needs, using an interview form specially developed for the purpose. Interviewees were queried about the types of feedback currently available to them, where they get it, how they use it, and where they send it. Interviewees were then asked to state any needs that they might have for additional feedback. The study found that the present feedback system is not providing all the feedback that training developers need for improving training programs and materials. The study recommended that to increase the quantity and quality of feedback available to training developers, the coordination between the DTD and trainers should be increased; management personnel should increase the number of contacts with the field; more emphasis should be placed on hands-on testing and other objective data collection methods; and computer-based data analysis and management techniques for handling feedback should be developed. The study may interest training developers and evaluators who wish to improve the quality of the feedback that they obtain. (Author/KC)

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Research Report 1351

FEEDBACK NEEDS OF TRAINING DEVELOPERS AND EVALUATORS

Bob G. Witmer
and
Billy L. Burnside

ARI FIELD UNIT AT FORT KNOX, KENTUCKY

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August 1982

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This report examines the needs of training developers for feedback from the field on the quality of their products and ways that these needs can best be served. Feedback provided to training developers by training evaluators at one large Center/School is discussed, and strategies for increasing the quantity and quality of this feedback are provided. Suggestions for designing an integrated data management and feedback system are also provided. Findings should be of interest to training developers and evaluators.

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Research Report 1351

FEEDBACK NEEDS OF TRAINING DEVELOPERS AND EVALUATORS

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FOREWORD

For some time, the ARI Fort Knox Field Unit has been engaged in the development and application of innovative, effective techniques designed to increase the quality of the products of Army Centers/Schools. These products include trained soldiers and training materials. The training evaluation and feedback team of this unit performs research and development on increasing the quality of these products by improving the information flow between training developers and evaluators and units in the field.

To improve the quality of their products, training developers need information about the products from users in the field. Presently much of the information available to training developers on their products is collected in the field by training evaluators. Training developers, however, have indicated that the feedback that they receive from the field via training evaluators does not satisfy all of their feedback needs.

This report examines the types of feedback presently collected by training evaluators and developers at one large Center/School and identifies their additional feedback needs. Present feedback sources are examined to determine their accuracy and usefulness. The results suggest that the feedback presently available to training developers is lacking in both specificity and objectivity, and thus may be neither accurate nor useful. Recommendations for improving the accuracy and usefulness of the feedback are given, which have implications for TRADOC and other Army personnel concerned with obtaining accurate, useful feedback from the field.

JOSEPH ZEIDNER
Technical Director

FEEDBACK NEEDS OF TRAINING DEVELOPERS AND EVALUATORS

EXECUTIVE SUMMARY

Requirement:

In order to improve the quality of their products, training developers need accurate, detailed feedback from the field. For the most part, training developers depend upon Directorates of Evaluation and Standardization (DOES) to supply the feedback needed. Recently, training developers have indicated that the feedback that they are receiving from DOES evaluators is not meeting all their needs. This report documents the kinds of feedback presently available to training developers through training evaluators or other sources, and suggests ways to improve the flow of useful feedback from the field to training evaluators and developers at Centers/Schools.

Procedure:

Thirty division and branch chiefs from the Directorate of Training Developments (DTD) and the DOES at a large Center/School were interviewed concerning their feedback needs using an interview form specially developed for the purpose. After being told the purpose of the interview, interviewees were queried about the types of feedback currently available to them. For each type of feedback mentioned, the interviewees were asked to tell where they get it, how they use it, and where they send it. Interviewees were then asked to state any needs that they might have for additional feedback. Results of the interviews were recorded on the interview form by the authors. Results obtained from different interviewees were integrated for drawing conclusions and making recommendations.

Findings:

The present feedback system is not providing all the feedback that training developers need for improving training programs and materials. In the case of training materials, more feedback is needed on their availability and use. In the case of training programs, considerable feedback is currently available, but the feedback tends to lack specificity and is largely derived from subjective sources. To increase the quantity and quality of feedback available to training developers, the coordination between DTD and DOES personnel should be increased, DTD personnel should increase the number of contacts with the field, more emphasis should be placed on hands-on testing and other objective data collection methods, and computer-based data analysis and management techniques for handling feedback should be developed.

Utilization of Findings:

The findings of this report should be useful to any group or agency interested in obtaining accurate feedback on the quality of their products. Training developers and evaluators should find the recommendations included in the report particularly useful for improving the quality of the feedback that they obtain.

FEEDBACK NEEDS OF TRAINING DEVELOPERS AND EVALUATORS

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SECTION I

INTRODUCTION

In order to develop and conduct effective training in an efficient manner, the Army has adopted the Instructional Systems Development (ISD) model. The ISD model, as described in US Army TRADOC Pamphlet 350-30, specifies a five phase process for the development, conduct and evaluation of training. In the first phase, ANALYSIS, the job is analyzed to determine what tasks should be trained under what conditions to what standards. The second phase is DESIGN, in which training objectives and test items are developed. During the third phase, DEVELOPMENT, the instructional materials, including the program of instruction, lesson plans, advance sheets and training aids, are created. During the DEVELOPMENT phase, a plan is also developed for pilot testing or validating the newly developed materials. Phase four, IMPLEMENTATION, consists of preparing for and actually delivering the instruction. During the final phase, CONTROL, the quality of the instruction is assessed and the instruction is revised as necessary.

Much of the responsibility for ensuring that training development at the Center/School proceeds in accordance with the ISD model is vested in the Directorate of Training Developments (DTD). Some responsibility for ISD, however, is reserved for the Directorate of Evaluation and Standardization (DOES) and other directorates or departments. The DTD is fully responsible for the ANALYSIS phase and assumes the lion's share of responsibility for the DESIGN and DEVELOPMENT phases. The DTD shares responsibility with the DOES in the development of tests and validation of tests and instruction. IMPLEMENTATION is performed by the various commands or departments responsible for particular areas of instruction (e.g., the maintenance department is responsible for maintenance instruction). In the CONTROL phase, the DOES is responsible for evaluating the quality of instruction, identifying problem areas and referring the problems to the DTD and other directorates/departments (e.g., Directorate of Aviation, Weapons Department, Maintenance Department), who in turn, are responsible for making the necessary course revisions and putting them into effect.

To perform the various phases of the ISD process, the DTD, the DOES, and the directorates/departments need feedback from units in the field. This is especially true for the CONTROL phase in which the quality of instruction is assessed. Instructional quality is assessed through the evaluation of the products of training development activities. These products include trained soldiers, training materials (e.g., field manuals, technical manuals, ARTEPs), and training programs. The DOES's mission mandates that it collect data to assess training products and, where problems are identified, provide these data as feedback to the appropriate directorate/department for resolution. The DTD and instructional departments need to be informed of problems with soldier performance, training programs and training materials in order to correct deficiencies and improve their products. DTD's charter does not provide for DTD personnel to gather data for feedback purposes. The DTD, therefore, must depend on the data provided by the DOES for the feedback it needs. The instructional departments are likewise dependent upon the DOES for their feedback needs.

There is a certain logic in having training evaluators such as the DOES assess the quality of the products of training developers and provide feedback on any problems identified, rather than having training developers evaluate their own products. The DOES is likely to be more objective in its evaluation, and it is more efficient for a single agency to collect the feedback for several agenices than for each agency to collect its own. Furthermore, the demands upon the time of the units from whom the feedback is collected are probably less when a single agency is responsible for collecting the feedback. On the other hand, the feedback provided to the DTD/departments by the DOES may not fulfill the needs of these training developers. In fact, the DTD and others have recently indicated a growing concern that the DOES is not providing the feedback that they need. They suggest that much of the feedback that they receive from the DOES is too general and is not useful for modifying training materials and training programs. At one Center/School, training developers have asked the Army Research Institute (ARI) to assist them in identifying useful field performance data sources and developing procedures for feeding field performance data back to training development activities.

ARI to date has completed two reports aimed at improving the quality of feedback provided to Army Schools/Centers. The first (Burnside, 1981) explores the usefulness of existing data sources (e.g., job books, SQT results) of field performance feedback, including general recommendations regarding the use of different feedback methods. The other report (Burnside, 1982) examines the accuracy of the most commonly used method for obtaining feedback on task performance, subjective appraisal. Feedback obtained by this method consists largely of individuals' judgements, estimates, or opinions, which can be but are not always externally verified. In addition to these reports, ARI is developing and testing various data gathering procedures and formats for collecting feedback in areas where the feedback needs are already known.

The purpose of this paper is to identify the information feedback needs of training developers and evaluators as the basis for developing an integrated feedback system for feedback of information from centers, schools and operational units to training developers and evaluators. Present sources of feedback and feedback needs are identified through interviews with training developers and evaluators at one Center/School. Since the results are based primarily upon a study of a single Center/School, generalization to other Centers/Schools should be conducted cautiously. Most of the conclusions reached in this paper are general ones which should apply to other Centers/Schools. Because they are involved in all phases of training development, DTD personnel provided the data on the feedback needs of training developers. DTD personnel are involved in the performance of the following training development functions: front-end analysis; development of individual and collective training materials, devices, and programs; and preparation of camera-ready copies of and distribution of institutional and extension training materials. It was felt that, based upon their experiences, DTD could adequately express feedback problems and needs from the training developer's perspective. Therefore, other training developers such as those in the instructional departments were not interviewed. The DOES as the primary evaluator and provider of feedback at the Center/School was selected for obtaining data on the feedback sources and needs of training evaluators. In

addition to gathering feedback on personnel, logistics, and training problems from National Guard, Reserve, and active units in the field, the DOES collects data on the effectiveness of courses conducted at the Center/School. Other functions performed by the DOES include providing and coordinating assistance to units in the field and coordinating modernization and deployment of new weapons systems. Although these functions are as much a part of the DOES's mission as evaluation, this report will emphasize the evaluative function since much of the feedback collected by the DOES is collected for evaluation purposes.

This paper concentrates on the feedback needs as they apply to the products of TRADOC Centers/Schools to include trained soldiers, training materials, and to a limited extent, training programs. The paper is comprised of five sections. Following this section, Section II describes the methods that were used to identify the feedback needs of training developers (DTD's) and training evaluators (DOES's). Section III describes the collection and use of feedback data by evaluators at one DOES and lists feedback needs as perceived by the DOES division and branch chiefs. Section IV describes information feedback available to a representative DTD from several sources, including the DOES, and tells how each type of feedback is used by the DTD, with special emphasis on DTD's feedback needs. Based on the feedback needs as stated by training developers and evaluators and on previous analyses of feedback sources and methods (Burnside, 1981, 1982), the final section presents conclusions about the feedback methods used in gathering, analyzing and distributing feedback information on Center/School training development and administration procedures.

While this paper deals primarily with feedback on soldier performance and the use of training materials, many of the problems and issues identified apply equally to other types of feedback needed by various agencies. Other types of feedback needed might include feedback on the utilization of training resources, feedback pertinent to the assignment and retention of qualified personnel, and feedback needed for managing facilities and materiel. The recommendations included in Section V may be used by any group or agency interested in obtaining accurate continuing information on the quality of their products. Training developers and evaluators should find the recommendations especially helpful.

SECTION II

INTERVIEW METHODS

Interviewees

The personnel interviewed were division and branch chiefs from the DTD and DOES of a major TRADOC Center/School. Each division or branch chief interviewed was responsible for management of a major functional area, as outlined below. A total of 30 division and branch interviews were conducted early in CY 1982, eight in the DOES and 22 in the DTD. In some cases, experienced personnel in a branch were interviewed jointly with or in addition to the branch chief, particularly when the branch chief was relatively new and inexperienced in the position. In the DOES, three division chiefs and five branch chiefs were interviewed, and in the DTD six division chiefs and 16 branch chiefs were interviewed. These personnel represented all the available division and branch chiefs occupying permanent operational positions; chiefs of special teams or administrative offices were not included in the interview sample. Eighteen of the 30 division/branch chiefs interviewed were military officers, and the remainder were civilian personnel. The experience of the interviewees in their duty positions ranged from a few months to seven years. While no two DTD's or DOES's are organized exactly the same, the personnel interviewed are representative of those in any TRADOC Center/School DTD and DOES. The functional areas addressed in the DOES interview sample included evaluation of training at the Center/School, assessment of personnel, logistics, and training matters in active Army, Reserve, and National Guard units, and systems analysis. In the DTD the functional areas addressed included front-end analysis, development of individual and collective training materials, programs, and devices, production of training materials, and distribution and management of extension training materials.

Interview Form

In order to insure that a consistent structure was followed throughout the interviews, a simple form was developed and followed. This form was modified based upon experiences during early interviews, and the final version, consisting of three worksheets, is at Appendix A. The first worksheet contains an outline of the introduction to the interview and a general inquiry concerning the types of feedback currently available. The second worksheet contains specific questions about the feedback identified on the first worksheet, and the final worksheet contains a general inquiry about the types of feedback needed that are not currently available. Blank notebook paper was used to record any information obtained during the interviews that did not readily fit on one of the worksheets.

Interview Procedures

The two interviewers for this project were the authors of the present report. Both these individuals had experience conducting similar interviews in previous research projects, and they practiced interview administration together to insure that they followed the same interview procedures. Each interview was

conducted in the interviewee's work area or a convenient conference facility. The interviewer recorded the interviewee's responses on the appropriate worksheets. An introduction to the purpose and procedures of each interview was given following the outline on Worksheet 1. Each interviewee then listed the major types of feedback available to him or her, and these were recorded on this worksheet. He/she then answered the questions on Worksheet 2 for each type of feedback listed on Worksheet 1. The interviewer completed separate copies of Worksheet 2 for each type of feedback. The major types of feedback needed but not available were then recorded on Worksheet 3, along with any general comments received. In some cases a return visit or telephone call was made to an interviewee to clarify information obtained. Entries on interview worksheets were revised as necessary after the interview to insure that they contained complete and readable information.

SECTION III

DOES FEEDBACK SOURCES AND NEEDS

As one of their missions, DOES's provide feedback to Centers/Schools concerning problems existing at training institutions and in the field. DOES's use a variety of methods to gather the necessary information and disseminate it to the appropriate directorates/departments at the Centers/Schools. The methods employed by DOES in collecting and disseminating the feedback information largely determine the quantity and quality of feedback available to Centers/Schools.

This section describes the kinds of feedback provided to the directorates/departments at one Center/School by the DOES at that institution. For each type of feedback listed, methods used by the DOES to obtain and distribute that information will be identified and discussed. As a matter of convenience information obtained from units in the field and information collected at the institution will be discussed separately. Following the discussion of types of feedback and feedback methods, the techniques used by the DOES in reducing and analyzing feedback information are discussed. This is followed by a general discussion of the usefulness and reliability of the feedback presently provided by the DOES. The section concludes with a description of the feedback needs of the DOES.

Although the data presented in this section are based on the study of a single DOES, the types of feedback discussed and many of the problems associated with the collection and dissemination of this information are common to other DOES's and thus may provide valuable lessons for DOES's in general. This section may also be of use to departments and other directorates for understanding what types of feedback DOES's obtain and how they obtain them.

Feedback From The Field

DOES's generally send evaluation teams to units in the field to obtain information about problems the units might be experiencing. The DOES in this study sends teams consisting of two to five members to each active and reserve unit once every two or three years. The members of the team typically include individuals knowledgeable in the areas of personnel, logistics and training. During each visit the evaluation team administers various surveys, questionnaires, and informal interviews to selected unit personnel. Neither systematic observation nor formal testing is used in gathering the information. Surveys administered by DOES personnel to graduates of the training institution and their supervisors require the graduates/supervisors to rate the graduate's performance on specific tasks. Questionnaires in the areas of logistics, personnel, and training are either sent to the unit just prior to a visit or are administered on the spot by DOES personnel. The questionnaires include questions on availability and quality of personnel, equipment, and training materials and are generally completed by the ranking officers in the unit. The interviews, most of which are also conducted with these officers, address many of the same topics as

the questionnaires, but include additional questions on training materials and soldier performance and a few follow-up questions based on the unit's responses to the questionnaires.

Ratings of graduate performance. For each graduate-producing course taught at the Center/School, graduate supervisor's surveys are completed by supervisors of recent graduates. These surveys require supervisors to rate on a five-point scale the performance of each graduate relative to that of the average performer on specific tasks. The supervisor is also required to rate, on a five-point scale, the criticality of each task and estimate how frequently the graduate being evaluated performs the task. Similar surveys, referred to as graduate surveys, are completed by the graduates themselves, but only by graduates of NCO and officer courses. In these graduate surveys, the graduates are required to rate their own performance on each task, estimate their frequency of performance, and judge the criticality of the tasks. When the responses to these surveys indicate that the graduate performs certain tasks poorly, a follow-up interview may be conducted to determine what parts of the tasks the graduates can't do and why they can't do them. Separate follow-up interviews are conducted for tasks performed marginally and tasks performed especially well. One interviewee, however, indicated that follow-up interviews of survey responses were seldom conducted in recent visits. The results of supervisor and graduate surveys are rarely reported by the DOES, and it was not clear how or if these results were being used.

DOES personnel have indicated that graduate supervisor's surveys are used in lieu of hands-on performance testing because the demands of the latter are extensive in terms of time and resources. However, Burnside (1982) has suggested that subjective appraisals of performance on specific tasks, like those required by the DOES surveys, may not be accurate, and should always be checked against objective measures, such as observations or tests of hands-on performance, to ensure their accuracy. Discussion with DOES personnel indicates that no accuracy checks have been made for the graduate and graduate supervisor's surveys.

Responses to questionnaires. The evaluation team administers three different questionnaires during field visits: (1) a personnel questionnaire, (2) a logistics questionnaire, and (3) an Army Training and Evaluation Program (ARTEP) questionnaire. The personnel questionnaire is generally administered directly to the battalion commander by the chief of the personnel division or his representative during the visit. Logistics and ARTEP questionnaires, on the other hand are mailed to the unit just prior to the evaluation team's visit and a member of the team collects the completed questionnaire shortly after arrival in the unit. The logistics questionnaire is completed by the battalion logistics officer, battalion maintenance officer, and/or executive officer while the ARTEP questionnaire is usually completed by the battalion operations and training officer. The personnel questionnaire includes questions on the numbers, experience, and training of the personnel in the unit. The logistics questionnaire includes additional questions on the number of personnel in the unit having desired educational and experiential qualifications. Questions regarding the condition and availability of equipment needed by the unit also appear on the logistics questionnaire as do questions concerning the ability of unit personnel to demonstrate proficiency or understanding

in general functional areas (e.g., troubleshooting, use of publications). The ARTEP questionnaire is used to evaluate the ARTEP with emphasis on the ARTEP document. Included are questions designed to assess the unit's opinions about the usefulness of the ARTEP and to determine how the unit uses the document.

While some questions on the personnel, logistics, and ARTEP questionnaires may provide objective, quantifiable data, overall the questionnaires do not provide the data in enough detail to satisfy the needs of training developers. As presently stated, many of the questions identify general problems but do not pinpoint the source of those problems so that the problems can be eliminated. In order to satisfy the feedback requirements of training developers, some of the questions included in the personnel, logistics and ARTEP questionnaires may need to be redesigned and additional questions developed.

Informal interviews. Another type of information gathered during field visits consists of data from informal interviews with battalion and company commanders and their staffs. Generally the interview covers personnel, training, and logistics topics. The usefulness of training materials (e.g., ARTEPs, Skill Qualification Tests (SQTs), Field Manuals, Technical Manuals, Commanders Guides) are typically addressed during the interview, as are some general questions about soldier performance. Informal interviews are conducted by one or more members of the evaluation team. At least two members of the team indicated that they use a topical outline as a checklist in conducting these interviews. The data collected during the interview are recorded as long-hand notes by the interviewer.

The DOES surveyed in this study relies heavily on the information collected during interviews for identifying problems experienced by units in the field. While unit personnel respond favorably to interviews, preferring them to questionnaires (Burnside, 1981), lack of structure in many interview situations may result in a failure to capture much important data and hinder comparison of data across units. The interviews may need to be structured by including a standard set of questions that are asked of every unit visited. As the reliance on the interview as one's primary source of data increases, the importance of structuring the interview also increases.

Trip reports. The DOES uses the information gathered during visits to the field as input to trip reports written following each visit. These reports are usually written by the evaluation team leader. Each trip report consists of a series of statements about the unit visited. Many of the statements identify problems that the unit is experiencing. In the trip reports, personnel, logistical, and training problems are generally listed separately. Typical problems listed in trip reports include the unavailability of certain training materials and equipment or unit dissatisfaction with the materials and equipment that are available. Among other problems frequently mentioned are shortcomings in institutional training programs or perceived deficiencies in the performance of the graduates of those programs. Personnel shortages of personnel having skills critical to the functioning of the unit is another frequently mentioned problem. Although any problem identified during a field visit might be included in a trip report, one team leader for the evaluation team stated that frequency of

occurrence and problem criticality are prime considerations in deciding which problems to include. However, no running tally is kept on the frequency of occurrence of different problems, and there are no set criteria for judging either the frequency or criticality of a problem. Selection of problems for inclusion in trip reports then may best be described as based on the subjective judgment of the team leader.

Trip report extracts. Once assembled, the complete trip report with executive summary and inclosures is provided to the Commanding General of the Center/School for his review. The Commanding General routinely uses information from trip reports in his monthly letter to commanders in the field. Upon approval of the Commanding General, applicable portions of trip reports are extracted and transmitted to the Center/School departments/directorates and to major commands (TRADOC, FORSCOM, DARCOM). To maintain the anonymity of the units evaluated, unit designations are normally deleted from the trip report extracts. The trip report extracts are the primary means by which the DOES informs the Center/School departments/directorates and major commands about problems experienced by units in the field. Trip report extracts usually include a request that the DOES be informed of any actions that the department/directorate takes to address the problems identified.

Unit training materials. Units surveyed during field visits often voluntarily provide training materials that they have developed for their own use. Upon their return to the Center/School, DOES evaluation team personnel place these materials in a file. If the materials are particularly good, or if they are likely to be of general interest, they may be added to the trip report as inclosures.

Other field feedback media. Besides providing input for trip reports, the information obtained from the surveys and questionnaires completed during field visits provides feedback in other ways. For example, completed ARTEP questionnaires are sent to the DTD, where they are available as feedback for updating or modifying ARTEP documentation. The DOES personnel division compiles quarterly summaries from the responses to the personnel questionnaire. These summaries present totals, averages, or other descriptive statistics in tabular form for each questionnaire item across the units surveyed during that quarter. Quarterly summaries are kept on file at the DOES and are sent to the Directorate of Combat Developments (DCD), the Military Personnel Center, or the Soldier Support Center on occasion. Responses to graduate and graduate supervisor surveys are entered quarterly into a computer via a remote terminal by DOES personnel in the systems information division. DOES personnel have programmed the computer to compute descriptive statistics and generate tables of these data for making simple comparisons. These data are used by the training division of the DOES in identifying trends in the abilities of graduates to perform or not perform specific tasks. This information may be passed along to the DTD, the departments, or the Commanding General of the Center/School. Data from the logistics questionnaire are reviewed by the Chief of the Logistics Division. The Logistics Chief extracts the information pertaining to the ability of unit personnel to perform in general functional areas (e.g., troubleshooting, use of publications) from the logistics questionnaire, summarizes it, and forwards the results to the

Maintenance Department. The Maintenance Department, however, indicates that the information provided on soldier performance is too general. To say that soldiers cannot troubleshoot is not sufficient. The Maintenance Department needs to know what soldiers, in how many battalions, cannot perform what particular troubleshooting functions on what equipment and what are the reasons for the poor performance (e.g., cannot locate faults, inability to use particular test equipment).

Another means of providing feedback on unit problems and needs is the Annual Branch Training Team (BTT) Report. The author of the BTT report, usually a branch chief in the training division or the DOES director, selects what he/she feels to be the most important information gathered by the DOES during field visits for the year for inclusion in an Annual BTT report. The BTT Annual Report is prepared for the Commander of the US Army Training and Doctrine Command (TRADOC) in accordance with TRADOC Circular 350-81-1. DOES's BTT report is not distributed to other departments/directorates at the Center/School, although the final BTT report produced by TRADOC may be distributed to the Center/School departments/directorates.

The DOES collects information from units that cannot be visited during a given year by mailing out surveys and questionnaires to them. Questionnaires and surveys distributed to units by mail include a personnel unit assessment questionnaire, a logistics unit assessment questionnaire, graduate supervisor's surveys and graduate surveys. Completed questionnaires or surveys are returned to the DOES through the mail. DOES personnel estimated the return rate to vary from 10% for the graduate surveys to 40% for the personnel questionnaires. The relatively low return rate for the graduate surveys might be due in part to its length, which varies from 3 to 10 pages for different graduates. The personnel questionnaire, on the other hand, is only 2 pages in length, and is sent to battalion commanders, who may be more willing than recent graduates to complete questionnaires of whatever length. The resulting data are treated essentially in the same way as the analogous data collected during field visits, except that the data collected through the mail are not included in trip reports.

Although distributing surveys and questionnaires through the mail is efficient in terms of time, effort, and money, and provides the DOES with information that might not otherwise be obtained, there are serious drawbacks to this method of collecting feedback. The low return rate makes it questionable whether the responses are representative of the units surveyed. Another drawback is that unit personnel often perceive mailed surveys as chores to be tolerated and do not devote as much thought to completing them as they could.

Another source of feedback from the field on soldier performance is the results of Comprehensive Occupational Data Analysis Program (CODAP) surveys. The DOES periodically receives print-outs of CODAP results from the Soldier Support Center, National Capitol Region in Alexandria, VA. CODAP surveys typically require soldiers to rate a list of tasks on each of several factors to include task criticality, how frequently the task is performed, and how well it is performed. Several DOES personnel mentioned receiving CODAP results but only one branch chief indicated that he used the results. That branch chief

stated that he extracted data from the CODAP surveys on the frequency of performance of tasks and used the data in conjunction with other information to determine if the right skills are being emphasized at the Center/School. He did not explain just how he combined the CODAP data with other information, nor did he describe how he decides if the right skills are receiving emphasis.

The primary source of data for matters concerning the National Guard is the National Guard Bureau. The Army National Guard (ANG) advisor frequently receives requests for information about the National Guard from various agencies (e.g., the DTD, the DCD) at the Center/School. Typically following such a request, the ANG advisor calls the National Guard Bureau, which either provides the needed data on the phone or sends the data in written form to the ANG advisor. The ANG advisor then relays the data to the person or agency requesting it. Among the types of information requested are SQT results, demographic data on ANG personnel, number of ANG personnel qualified in a particular MOS, and questions regarding the number of a given item of equipment or device available in ANG units.

Feedback At The Center/School

Much of the information feedback gathered on soldier performance and training materials at the Center/School is collected by evaluation personnel in the DOES training division. Types of information gathered by these personnel ininclude performance data on objective tests, perceptions of graduate performance, student and instructor evaluations of courses taught at the Center/School, and observations of the training process used in conducting the courses.

Course test results. The training division routinely receives results of tests administered at regular intervals from the test and evaluation branch of the Directorate of Plans and Training (DPT). These results are received in the form of tables displaying the number of soldiers tested and the number receiving first-time NO-GO's on each task. From the DPT, the DOES also receives completed scoresheets showing each soldier's performance on each task. These scoresheets break out the individual soldier's performance by subtask and give reasons for NO-GO's on each task and subtask. From these scoresheets the DOES compiles the percentage of soldiers tested who failed the tasks for each reason. The DOES also uses the scoresheets to compile the number of tasks failed by each individual soldier. The results of DOES's analysis of the test results are distributed to the DTD, DPT, and the various directorates/departments responsible for the instruction.[1]

When the testing is done correctly in an unbiased manner, the test results provided by the DPT, and DOES's analysis of them, are an excellent source of objective feedback to training developers, especially when coupled with observational data on the training preceding them. On several occasions DOES personnel

[1]Until recently, these test results were incorporated in semiannual or quarterly reports distributed to the DTD and others. But the present branch chief has discontinued these reports because of the excessive time required to produce them.

have observed the testing to be so poorly conducted that the outcome could not be trusted. In at least one case, DOES personnel administered independent tests to a sample of soldiers following a course because of low confidence in the course test results. The results of this independently administered test were made known to the Commanding General of the Center/School, but were not distributed to the department or the DTD.

Skill Qualification Test (SQT) results. Another source of objective information received by the DOES training division is SQT results. SQT results in the form of a computer print-out are sent to the DOES from the Army Training Support Center (ATSC) each quarter. The SQT results are broken out by MOS and skill level. The print-out lists SQT items along with the percentage of soldiers receiving NO-GO's on each item. Items having high failure rates (e.g., 50% or greater) and the tasks with which they are associated are investigated by the DOES to determine the reasons for the poor performance. The DOES checks the wording of the offending item and looks for discrepancies between the task as tested on the SQT and as trained in the unit and described in the soldiers' manual. All SQT-related problems identified by the DOES are referred to the DTD for its consideration and/or resolution. SQT problems may also be brought to the attention of an individual test specialist working for ATSC but co-located with the DTD.

Interviews with training division personnel suggest that the feedback provided to the DTD and ATSC on SQT problems has been relatively infrequent in the past and is becoming less frequent as soldier performance on the SQT improves. What feedback the DOES does provide to the DTD or ATSC is communicated by phone or in a memorandum.

Informal feedback seminars. Training division personnel conduct informal feedback seminars with officers and NCO's within the first two weeks of the NCO and officer advanced courses at the School. Officers and NCO's are asked to estimate their ability or the ability of those that they supervise to perform specific tasks. Questions concerning task performance are asked of the officers and NCO's as a group, and responses are recorded as longhand notes. Information obtained through these feedback seminars is used in conjunction with graduate and graduate supervisor survey responses (collected in the field) for identifying tasks that are performed poorly by graduates. When officers indicate that a large proportion of graduates (precise objective criteria were not stated) cannot perform a particular task satisfactorily, training division personnel inspect the training using methods described in the following paragraph to determine if the problem lies in the training program. Problems identified through the use of graduate surveys and feedback seminars are typically referred to course managers of the appropriate departments, the DTD, or to the Assistant Commandant of the Center/School for action or information purposes.

Course evaluations. The DOES routinely evaluates the courses given at the Center/School. Practically all new or pilot courses are evaluated, with other established courses being covered to a lesser degree. Observations are collected during training and testing to determine the effectiveness and efficiency of the courses. Until recently, the observations of training and testing were collected

routinely using structured observation forms that allow the observer to check for the occurrence of particular training events and record his/her comments. Using a training evaluation form, the evaluator sought to determine if tasks were demonstrated and practiced to standard, if the lesson plan was followed, and if needed training materials and job aids were used. Using a testing evaluation form, the evaluator observed testing to determine if the right tasks were being tested to the correct standards and checked for bias by examiners in administering and scoring the test. The DOES branch chief responsible for course evaluation at the Center/School indicated that these forms are no longer used routinely in evaluating training and testing, and that he favors allowing a subject matter expert to monitor the class and make notes on any problems observed. Data collected during course evaluations are reviewed periodically, looking for recurring comments or something that is totally at variance with references (e.g., soldier's manuals, field manuals, technical manuals), lesson plans, or expected procedures. When problems are identified, they are relayed to the instructional departments, the DTD, or to the Deputy Assistant Commandant for Plans and Operations for corrective action. The frequency of feedback of information on course problems to the instructional departments varies. For new courses being piloted, feedback may be given on a weekly basis. Feedback on other courses is less frequent and somewhat irregular.

Course evaluations are an important part of an overall feedback system. Tasks that are not performed well by soldiers in the field often are not trained well at the Center/School. DOES's must employ reliable methods in conducting course evaluations. Sending a subject matter expert to class with instructions to record any problems he/she observes does not consistently produce reliable data. This method of evaluating training is likely to miss the most critical problems associated with training and testing and focus on minor technical discrepancies in the course content. A systematic method for evaluating training has been developed by ARI and is documented in a series of job aids (Kristiansen, 1981; Kristiansen & Witmer, 1982a; Kristiansen & Witmer, 1982b; Witmer, 1981).

Student questionnaires. In evaluating School courses, the training division gathers information from students and instructors. Just prior to graduation, student questionnaires are administered in officer and NCO courses. Student questionnaires provide students the opportunity to rate the instructional adequacy of the training they received for each task taught during the course. When responses to the student questionnaire show that 20% or more of those surveyed are dissatisfied with the training given for any one task, the instructional department responsible for the training that task and the DTD are informed of the potential problem.

The DOES bases its use of student questionnaires on the assumption that officers and NCO's are qualified to judge the adequacy of the training that they receive. In reality, however, students may not be qualified to judge the adequacy of the training they receive. It is unlikely that students possess the technical sophistication necessary that would allow them to evaluate either course content or the training and testing processes employed. Students' evaluations may also be unduly influenced by the personality or presentation style of the instructor.

Instructor questionnaires. Periodically, the DOES utilizes instructor questionnaires to get the instructor's perspective on the adequacy of the course design and the quality of the training materials provided. Instructor questionnaires are most frequently used in conjunction with piloting a new course or during a special study of a particular course; they are not used routinely in evaluating training. Instructor questionnaires are either mailed to instructors or handed directly to the instructor following a class. In either case, the instructor is asked to complete the questionnaire independently and return it directly to the DOES. Until recently, the DOES tabulated the instructors' responses on each item for inclusion in quarterly or semi-annual course reports. We were not able to determine how the results from this questionnaire are being used at the present time.

Training inspections. Co-located with but not directly affiliated with the DOES is the Commanding General's training inspection team. The primary function of the team is to periodically inspect the training of every unit at the Center/School. This includes activities responsible for institutional training as well as active operational units. In the past year, the training inspection team has inspected over 600 blocks of instruction.

A standard training inspection report data collection form (Appendix B) is used in inspecting the training and reporting the results of the inspection. The data collection form includes items to be observed during the training and testing. The form has a place for recording whether or not the event described in the item occurred and provides some space for inspector's remarks and recommendations. The space provided however is inadequate and does not encourage the training inspector to make comments. A special inspection form is used for inspecting physical readiness training. All other training is inspected using the standard inspection report form.

The training inspector observes the training and testing as they occur, recording answers to specific questions relating to the quality of the training. When an answer to one of these questions indicates a problem with training or testing, the inspector writes a short comment beneath the item, explaining why the question was answered as it was. Additional comments and recommendations are recorded on the last page of the inspection report. As a last step in inspecting the training, the inspector assesses whether or not the training achieved its training objective and records his/her assessment in the report. This assessment is to a certain extent subjective, and taken alone may not adequately reflect the effectiveness of the training. Following the inspection, the inspector briefs the instructor on the good and bad points of the training.

Each completed inspection report is reviewed by the chief of the Training Inspection Team for completeness and internal consistency. The training inspector logs the class in on a large chart as having been inspected, which lists the unit and class inspected, the instructor, the inspector's overall assessment of the class, and the date of the inspection. The completed report is then filed by date for ease of reference.

Copies of the inspection report are sent to the Commanding General of the Center/School and to the unit responsible for the training that was inspected. Depending on the nature of the problems identified, copies of the report may also be sent to the DPT, the DTD, or the School. This information may be used by the units to modify their training and by the DPT, the DTD or other School directorates/departments to change factors adversely impacting on the training. Some units also utilize the information provided by the reports in keeping track of the state of training in their unit.

Professionalism surveys. The personnel division administers professionalism surveys to officers and NCO's attending the officer and enlisted advanced courses at the School. The surveys are designed to gather the opinions of officers and NCO's in several different areas, including the professional qualifications of other officers, career perceptions, career intentions, career satisfaction, unit training considerations, and the perceived quality of new recruits. Demographic data are also collected for each soldier responding to the survey. The responses to these surveys are analyzed item-by-item in order to identify trends in the data suggestive of personnel problems. Descriptive statistics for each survey item are computed periodically and a roll-up of the summarized results is produced in tabular form. The descriptive statistics are used by the personnel division to identify problem areas. Problems thus identified are referred to the directorate/department who is in the best position to do something about them (e.g., Directorate of Combat Developments, Soldier Support Center, MilPerCen). If the directorate/department is unwilling or unable to resolve the problem, the Deputy Commanding General may be advised. Problems affecting the entire command are brought to the attention of the Center/School Commanding General. If the Commanding General agrees that the problem should be addressed, then he directs the appropriate directorate/department to take action to solve the problem.

Data Reduction and Analysis

The large amount of data collected by the DOES necessitates that the data be reduced prior to distribution to other agencies. The primary strategy used by the DOES in reducing the data consists of summarizing the data over one or more variables and tabulating or cross tabulating the results. The tabularized results are typically expressed as a frequency count or as a percentage of the total responses. For example, course test results may be expressed in terms of the percentage of soldiers tested who passed the test for each task, and the percentage who failed for each of several reasons (e.g., faulty procedure, too much time). The tabulated results are either forwarded to the appropriate agency, allowing the agency to draw their own conclusions, or else the DOES identifies problems suggested by the results, and communicates their interpretation of the problems to the agency. In some cases, the DOES uses a pre-established criterion as a means of identifying significant problems (e.g., if 20% or more of the responses to an item suggest that a problem exists, then the DOES identifies the problem to the appropriate agency for action). In other cases the DOES looks for data suggesting the existence of an undesirable trend or information indicating a problem that is inherently critical. For example, the DOES is likely to identify a problem for further action if it affects all or many units served by the Center/School, or appears to be increasing in

severity over time. With regard to trends, nearly one-half of the division and branch chiefs interviewed stated that they looked at trends in the data as a means of identifying problems. None of these chiefs were able to specify precisely how they determine the existence of a trend. One of those interviewed admitted that, at least for him, identifying trends was done subjectively based on his best judgment. Other remarks made in the course of the interviews suggests that the DOES does not have clear guidelines that they consistently use in identifying problems. For example, several interviewees expressed difficulty in determining how frequently a problem had to be mentioned before it could be considered serious enough to warrant further action.

The DOES appears to use statistical procedures for data reduction on a very limited basis. The use of statistical analysis for arriving at conclusions and making comparisons seems to be the exception rather than the rule. During the interviews only one instance was mentioned in which statistical analysis was used by DOES personnel to draw conclusions regarding the data. Although DOES personnel frequently compare results across units, statistical procedures are seldom used in making the comparisons. It appears that comparisons are most often made by examining the data in the light of one's own experience and deciding (subjectively) whether the differences or discrepancies are of sufficient magnitude to constitute a problem. This subjective assessment of results, which varies from one person to the next, is a poor substitute for statistical analysis or other objective decision-making procedures, and is generally not accepted by systems analysts or other members of the analytic community.

Usefulness And Reliability Of Feedback

From the previous discussion of the feedback methods employed by the DOES, it is clear that the usefulness and reliability of the feedback provided to the Center/School is not all that it could be. Estimates of graduate performance by graduates and their supervisors may not be accurate. Much the same applies to student questionnaires. The questions asked on questionnaires and during interviews are often much too general with little consideration of the actual feedback needs of directorates/departments at the Center/School. Interviews conducted by the DOES lack the structure that is necessary to be a primary feedback source, and do not adequately cover battalion personnel at levels lower than the company level. Course evaluations in which observations are not structured and which depend on a subject matter expert to merely record what he/she sees are not likely to provide useful feedback to training developers. Subject matter experts often become so involved in the subject matter being taught that they all but ignore the manner in which the training is conducted. Such problems tend to reduce the usefulness of the DOES's feedback to the Center/Schools. The usefulness of the feedback is further diminished by DOES's lack of standardized objective procedures for analyzing their data, identifying trends, and drawing conclusions or making decisions on the basis of their data.

Despite the problems mentioned above most of the DOES branch and division chiefs expressed confidence in the data they collected. When questioned about the reliability of the information feedback that they get, branch and division chiefs indicated that they believed most of the feedback to be reliable.

Course test results and SQT results were perceived as being reliable as were questionnaire and interview data collected during field visits. Only two sources of data were questioned with regard to their reliability or usefulness. One branch chief questioned the reliability of the graduate supervisor's surveys on the basis that the results may be affected by how well the supervisors expect the graduates to do. Another branch chief expressed confidence in the reliability of the graduate supervisor's surveys but lacked confidence in the ability of graduates to estimate their own performance on specific tasks as is required by the graduate surveys. Professionalism surveys were considered to be of limited value as a means for identifying problems.

Feedback Needs

Feedback from users. Most of the information collected by the DOES is used for identifying problems associated with processes and products of the Center/School. As mentioned earlier, the DOES typically refers these problems to the directorate/department who is in the best position to solve them. Problems are usually described in narrative or statement form in a report or memorandum that also contains information briefly explaining the source of the data. Normally the DOES does not make recommendations on what actions should be taken to address the problems. The solution to the problem is left up to the responsible directorate/department, as is the decision of what action to take, if any. In one sense, the DOES can be said to turn over whatever problems it finds to the responsible directorate/department. The directorate/department, in turn, may or may not address the problem and is not obligated to take any action whatsoever to eliminate the problem.

Generally directorates/departments receiving information about problems from the DOES do not inform the DOES about what steps, if any, they are taking to eliminate the problems identified. Thus the DOES receives very little feedback from users on how the information that it provides is being used, or even if the information is being used. Occasionally a user will send a reply to the DOES indicating their agreement or disagreement with the DOES's conclusions and describing what they are doing to address the problems. One branch chief indicated that whenever he reported problems to a directorate/department, he requested that the directorate/department, by a specified date, inform him of what actions were being taken to address the problems. Other branch chiefs stated that their primary means of determining whether changes had been made in response to the problems they had identified was to make additional observations in the field or at the Center/School. For example, if the same problems were found during an inspection of a particular block of instruction that were identified during a previous inspection of that instruction, then the DOES can be pretty sure that no action was taken to eliminate the problems. In such cases the DOES may inform the Commanding General's office that no corrective action has been taken to eliminate the problems.

The lack of direct feedback from directorates/departments regarding how they use (or if they are able to use) the information provided by the DOES is a major impediment to obtaining better and more useful feedback. Without regular user feedback, the DOES may assume the feedback they provide is entirely

satisfactory and is useful in correcting Center/School problems. Statements by DOES personnel expressing confidence in the reliability of the feedback they provide, and their reticence in identifying additonal feedback needs indicate their overall satisfaction with the feedback they provide. User feedback is needed to inform the DOES of which types of feedback are most useful and to identify additional feedback needs.

Additional feedback needs. DOES division and branch chiefs indicated few areas in which they needed additional feedback. Two of those interviewed indicated that they already were getting more feedback than they could handle. A third expressed the opinion that present levels of data collection activities were placing excessive demands on units in the field.

Of those expressing the need for additional feedback, three wanted more task-specific feedback regarding hands-on performance in the field. One suggested that this feedback should come from hands-on tests administered to soldiers in the field, but another felt that DOES's did not have time during field visits to conduct hands-on tests. One of those wanting more task-specific feedback was especially interested in getting more and better feedback on gunnery performance. He perceived the need to identify individuals who continually fail to qualify on various gunnery tables and exercises and what types of engagements caused soldiers the most difficulty. He suggested that each time gunnery is conducted the following kinds of information should be recorded and made available for analysis: (1) type of gunnery exercise or table; (2) social security number of the soldier(s) participating; (3) when and in what location the gunnery occurred; and (4) what engagements and parts of engagements were failed by each soldier. Three interviewees indicated that they need more information on the availability and frequency of use of training materials, including technical lessons, devices, and publications. Another need alluded to was the difficulty in obtaining demographic data on individuals, particularly in the reserve component.

Summary

DOES's provide much of the feedback available to Centers/Schools. Various methods are employed by DOES's to provide this feedback and distribute it to the appropriate directorate/department. Some of these methods, however, produce feedback that is neither reliable nor useful to the directorate/department receiving it. Aside from the methods themselves, inadequate analysis by the DOES and lack of direct feedback from users are the factors that are most detrimental to the reliability and usefulness of feedback.

The types of feedback discussed in this section are listed in Table 1, along with the types of feedback available to the DTD, which are discussed in the next section. Also included in this table are the sources of feedback and the initial recipient of each type (DOES, DTD, or both). The table is intended to summarize both this and the next section and to bridge the gap between them. While reading the next section, it may be useful to refer back to Table 1 to obtain a summary of the types of feedback already discussed.

Table 1

Summary of Feedback Available to a Typical DOES and DTD

Type of Feedback	Source	Recipient
External:		
Graduate supervisor surveys	Supervision of recent graduates	DOES
Graduate surveys	Recent graduates	DOES
Personnel questionnaire	Battalion commanders	DOES
Logistics questionnaire	Battalion log off, maint off, or XO	DOES
ARTEP questionnaire	Battalion operations officer	DOES
Informal interviews	Battalion and company staffs	DOES
Trip reports and extracts	Center/School personnel visiting field units	DOES & DTD
Unit training materials	Field units	DOES
CODAP survey results	Unit personnel through Soldier Spt Ctr	DOES & DTD
SQT results	Unit personnel through Army Tng Spt Ctr	DOES & DTD
Informal, unsolicited feedback	Unit personnel	DTD
Internal:		
Course test results	Dir of Plans and Training	DOES
Course evaluations	Observations of classes	DOES
Student questionnaires	Students	DOES
Instructor questionnaires	Instructors	DOES
Informal feedback seminars	Students (officers and NCO's)	DOES
Training inspections	Observations of institutional and unit training	DOES
Professionalism surveys	Students (officers and NCO's)	DOES
Program of Instruction (POI) changes	Instructional departments	DTD
Pilot teachings and student trials	Observations of initial course administrations	DTD

SECTION IV

DTD FEEDBACK SOURCES AND NEEDS

In this section the feedback needs of training developers are addressed through review of the results of interviews with the DTD division and branch chiefs. Of the six division chiefs interviewed, four indicated that personnel in their division have a continuing need for feedback on the performance of soldiers and use of training materials. Two divisions are primarily involved in the production and distribution of training materials rather than in their development. Personnel in these divisions have relatively little direct need for feedback, and thus they were not interviewed extensively. The information presented here is derived primarily from interviews with 20 personnel involved in task analysis, the design and development of individual and collective training programs and materials, and the development and management of training devices. As argued earlier, these personnel are representative of those in any Center/School DTD.

In order to avoid attribution of interview responses to specific individuals, the information gathered is not organized by division or branch in this section. Rather, the results are organized first by types of feedback currently available and secondly by major feedback issues or needs that arose during the interviews. In the descriptions of feedback currently available, emphasis is placed on types of feedback from sources external to the Center/School (i.e., field units), but internal feedback is also briefly addressed. No attempt is made to describe these types of feedback in great depth or to detail the ways in which they are transmitted through the DTD. Instead, brief descriptions of them are given to serve as a basis for the follow-on discussion of feedback needs. These needs are described in terms of major problems or issues which surfaced from the interviews, and types of feedback are further discussed and evaluated as they relate to these issues. Recommendations for ways to satisfy the feedback needs identified are developed in a later section of this report.

Feedback Currently Available

Trip reports. A common way in which DTD personnel obtain external feedback is through reviewing written reports of information gathered during visits to field units. These trips are usually taken and reports written by DOES personnel, but reports are occasionally received by the DTD for trips taken by the Commanding General or other Center/School personnel. All DTD personnel interviewed who have a need for feedback from the field indicated that they receive copies of DOES trip reports or extracts from them, as described in the previous section. While most interviewees stated that useful indications of problems in the field are sometimes derived from trip reports, several criticisms of the utility of such reports as feedback were consistently brought out.

The most common critique of trip reports mentioned by nearly all interviewees is that these reports do not usually provide enough specific detail about problems existing in the field and recommended solutions to them. Major problems with the quality of soldiers or training materials are briefly described in trip reports, based upon observation of training, administration of

surveys or interviews, and informal interactions with field unit personnel. But problems are often not described in sufficient detail to allow training developers to determine what to do about them. An example of this situation provided by two interviewees is the statement from a trip report that "lieutenants can't read maps." Training developers need further information in order to address this problem, such as the time frame during which these officers completed institutional training and the subtasks which cause the greatest difficulty. With such information available, training could be redesigned to address the problem.

Several other problems with the obtaining of feedback from trip reports were mentioned by more than one interviewee. Five interviewees expressed concerns about the validity of information provided in trip reports. Trip reports often summarize general observations or opinions which may not be completely accurate. Trip reports also often do not delineate the extent of a problem identified. That is, it is sometimes not clear whether a problem is unique to a particular unit or widespread throughout field units. It is also sometimes unclear whether a perceived problem is based on the opinion of a few individuals or represents the consensus of numerous field personnel. Two interviewees brought up another concern with the validity of DOES trip reports. This is that information gathered in the field by personnel perceived to be evaluators (i.e., DOES personnel) may not accurately reflect the state of field units. At least some units tend to put their best foot forward for evaluators and to let these personnel see what they want them to see.

Another problem with extracting feedback from trip reports is related to their distribution. While all DTD interviewees indicated that they had seen DOES trip reports, the reported frequency of such reports varied. Three personnel reported that they had not seen a DOES trip report in over a year, and several others indicated that they saw them irregularly and had not seen one for several months. Several interviewees also expressed a suspicion that trip reports prepared by personnel in agencies other than the DOES are not distributed to all personnel having an interest in them. Related to concerns about the distribution of trip reports are concerns about their timing. Reliance upon trip reports for feedback sometimes does not provide information within the time frame that it is needed. For example, most interviewees indicated that they have an opportunity to provide questions to DOES personnel to be addressed during upcoming field visits. But one interviewee indicated that responses to such questions are not included in trip reports until four to eight months later, and two indicated that responses have never been received. Another problem here is that DTD personnel may not know what questions to ask if they do not know what the major concerns in the field currently are. That is, trip reports do not provide continuous feedback in which major problems are identified during initial trips and followed up with more intensive questioning during later trips. Trip reports generally do not provide data which can be quantified and maintained over time to establish trends and to allow integration of data.

The discussion above shows that, while review of trip reports is a common and sometimes useful method of obtaining external feedback, training developers have several concerns about the quality and usefulness of the data acquired.

The review of trip reports is in general a rather unsystematic way of gathering feedback. Problems with trip reports and ways of remedying them are further discussed in the context of general issues in the next section of this report.

Field visits. An alternative to training developers' relying on reports of trips by other personnel to obtain feedback would be for them to visit field units themselves. Interview results indicate that such visits occur only occasionally. Less than half the DTD personnel interviewed indicated that they had visited field units, and those who had reported that such visits were rare. The number of visits per branch varied from one or two a year to one every three or four years. The DTD does not have the resources for extensive field visits, since that mission has been primarily given to the DOES. The centralization of field visits within the DOES is an efficient use of travel resources and minimizes the disruption of field units by visits from Center/School personnel. However, restrictions on visits by training developers to the field does create some problems, many of which were described in the earlier discussion of trip reports.

Reliance on feedback gathered during field visits by other personnel results in training developers working with secondhand information. As described earlier, several interviewees indicated that this lessens the utility of feedback, since the information gathered is of questionable validity or not in sufficient detail. A few interviewees indicated that they will not accept any feedback as accurate unless they gather it themselves directly from the source in the field. Whether this perception is correct or not, it leads to an attitude which does not foster cooperation between DTD's and DOES's. Nearly half of the DTD personnel interviewed indicated that there is a need for increased personal contact between training developers and users in the field. Suggestions for increased coordination of field visits between training developers and evaluators are offered in a later section of this report.

The few trips that interviewees had made to the field were perceived as very useful. Most of these trips had been taken by front-end analysts during the early stages of training development. Extensive surveys and interviews of field personnel were conducted during many of these visits, although this fact has often been downplayed in order to avoid time-consuming coordination of survey forms. Task analysts have obtained updated validation of task documentation (tasks, conditions, and standards) during these visits, and in most cases they feel that such information is more valid than that gathered through other sources discussed below.

If more personal contact is needed between training developers and users in the field, an obvious solution would be for DTD personnel to more frequently visit the field. Seven of the 20 interviewees directly stated that they need to visit the field more frequently, and several others indirectly indicated such a need. Many potential advantages of such visits were mentioned. Implementation assistance provided by training developers might increase the use of training materials. Observation of task performance in the field would lead to more objective validation of task documentation than that obtained through surveys and interviews. Training developers would be perceived as helpers and

would obtain more useful information from field personnel than training evaluators do. But despite all these potential benefits, not all interviewees favored increasing the number of field visits. Many branches are understaffed and do not have the personnel resources to conduct such visits. The reliability of observations made during field visits was also questioned. As mentioned earlier, many personnel feel that units let you see only what they want you to see during visits to the field. Field visits must be properly resourced and designed before their number is increased.

In summary, interview results indicate that training developers rarely make field visits. But when such visits are made, the feedback derived from them is generally perceived as being very useful. There was a widespread but not universal feeling among interviewees that their opportunities to visit the field should be increased. Methods are needed to increase the interaction between training developers and users in the field within existing resources. Possible approaches to this are discussed in a later section of this report.

CODAP results. Another major type of external feedback which is currently used by training developers is the results of Comprehensive Occupational Data Analysis Program (CODAP) surveys. As described earlier, these surveys are conducted periodically by the Soldier Support Center, National Capitol Region in Alexandria, VA and descriptive analyses of the results are provided to Center/School personnel. The surveys generally list a long sequence of tasks and ask respondents to rate each task on a variety of factors, such as how critical it is, how frequently it is performed, and how well it is performed. The results of such surveys are of primary interest to task analysts, and these personnel are directly involved in the coordination of these surveys and use of results. Task analysts determine the tasks to be addressed in CODAP surveys, review and maintain files of computer print-outs of results, and request further analyses of the data from Soldier Support Center as needed. These analyses are primarily descriptive breakdowns of the data according to specified criteria. For example, a listing can be provided for all tasks meeting specified levels of performance frequency and criticality for a given MOS. The results are used by task analysts and by task selection boards to select tasks for training in the institution and in field units. CODAP results thus provide feedback that can be used to determine what tasks should be trained where.

The training developers interviewed mentioned several concerns with the use of CODAP results. A major one is that the results are not timely. A CODAP survey addressing officers' tasks within a particular specialty has been conducted only once approximately two years ago, and surveys of enlisted tasks are accomplished only once every three years. Due to the rapidly changing technology of today's Army, more continuous feedback on task performance is needed. The personnel resources of Soldier Support Center would have to be increased in order to provide such feedback. Another concern with CODAP results has to do with their perceived validity. Some interviewees perceived that subjective estimates gathered in lengthy surveys may not be valid indicators of the importance of tasks or the proficiency with which they are performed. Actual observation of task performance in the field may be the only way to accurately measure the factors addressed in CODAP surveys. For further support of this position, see

Burnside (1982). A final major concern with CODAP data is that they are not always available. No CODAP results are available for Reserve units, and they are badly needed. Results are also not available for some low-density MOS's, and for tasks performed on equipment which has recently been introduced to the field. Since 18 months are required to receive data after a task list has been submitted for a CODAP survey, needed data are sometimes not available. Or they are not available when needed, as discussed under the timeliness issue above. The stated concerns about CODAP data can be related to the lack of personnel resources to perform surveys more frequently and to check their validity, and to the lack of sufficient computer priority to perform analyses quickly. CODAP surveys provide an economical but not completely satisfactory way of obtaining task-specific feedback.

Because of their concerns with the timeliness and validity of CODAP results, training developers sometimes attempt to supplement these data. One way in which this is done is through field visits, as discussed earlier. Visits of DTD personnel to field units are often called job site visits or interviews, but they actually often involve administration of CODAP-type surveys. Such surveys address a smaller list of tasks than is usually addressed in a CODAP survey and they are frequently administered during an interview so that the training developer is available to answer questions. Use of these procedures leads training developers to perceive that the results of these interviews are more valid than results of CODAP surveys. Interviewees indicated that if a discrepancy existed between CODAP results and results of a branch-conducted job site visit, the latter would be accepted as more accurate. Until the CODAP survey system can be made more flexible and timely, training developers will rely on data gathered during field visits whenever possible. At present there is no way of integrating these two sources of data and checking their relative validity.

SQT item analysis. Field performance data are rarely available as feedback to training developers. Most of the currently available feedback identified by training developers interviewed consists of general observations, informal comments, and subjective survey responses. The only relatively objective performance data which have been available as external feedback to the DTD are Skill Qualification Test (SQT) results. These hands-on performance test results are provided to SQT developers in the DTD (and to training evaluators in the DOES, as discussed previously) by TRADOC's Army Training Support Center in the form of quarterly and annual computer print-outs, or item analyses. These analyses provide feedback on the percentages of soldiers passing and failing each task tested on the hands-on and written components of the SQT. This information is used to revise the test for future administrations. Tasks which are consistently passed by 100% of soldiers tested may be eliminated on future tests. Tasks which are failed by a large number of soldiers may also be eliminated, or the question may be revised if its form appears to have created the difficulty encountered. The item analyses provide important feedback to SQT developers as to the adequacy of their test construction. They also provide performance data which could be of use to other training developers. Two interviewees not involved in SQT development indicated that they need increased access to SQT results in order to identify potential training problems in the field.

However, this need for increased access to item analyses throughout DTD is apparently a moot point. Current plans call for formal administration of the hands-on component of the SQT and reporting of results to be eliminated by FY 83. Item analyses of hands-on performance test results will thus no longer be available. Results of written knowledge tests will continue to be available, but these results likely will not as directly indicate where training problems occur in the field. The amount of field performance data available as feedback to training developers will soon decline from little to none.

Informal feedback. Several of the types of feedback currently available to the DTD can be grouped together because they are not regularly collected through formal means. Included here are responses to questionnaires included in the back of training materials, requests for changes in training materials on DA Forms 2028, unsolicited letters and phone calls from field personnel, meetings at conferences, and information gathered due to turnover of personnel in the DTD. A common characteristic shared by most of these types of feedback is that they only infrequently provide useful information to training developers. Almost all training manuals include short questionnaires for users to complete and return to training developers. Interviewees indicated that such questionnaires are seldom returned; most estimates of return rate were in the range of one or two per year. Requests for changes in training publications are received slightly more frequently; interviewees estimated that they see from two to six per year. But these suggestions do not usually result in changes, since the suggestions are often general in nature, do not lead to feasible changes, or point out problems which training developers are already aware of. If possible, DTD personnel respond to personnel suggesting changes and state what change was made or explain why no change was appropriate. The low rate of suggestions from the field should thus not be due to the attitude that they will not be attended to. Other causes may be a low usage rate of training materials in the field, or a hesitancy to take the time to put comments into writing. Interviewees also indicated that they receive unsolicited letters and phone calls from field personnel at the rate of two or less per year. Field personnel for some reason do not frequently use informal channels to communicate feedback to training developers. Meetings at conferences also do not contribute much feedback. Several interviewees indicated that conferences provide only general feedback which is usually not useful. During 20 interviews only one instance of useful feedback being obtained during a conference was reported. This occurred when a battalion commander attending a conference actively sought out personnel in a branch of the DTD and provided specific feedback on use of specific training materials in his unit. Methods are needed to increase the frequency with which such feedback is provided. Reliance on approaches as unstructured as those described in this paragraph is unlikely to produce this result.

A type of informal feedback which more frequently provides useful information is based upon the turnover of military personnel within the DTD. Officers and NCO's transferring into the DTD often come from an assignment in the field. They thus bring with them useful information on the quality of soldiers and use of training materials in the field. This is a benefit of the high turbulence rate in the military assignment system and is a way to increase congruence between training developers and field personnel. However, the information

gathered by this method is limited by human memory and by the experiences which training developers had while assigned to field units. This type of feedback is an important one, but it should be supplemented by information gathered regularly in a wide variety of units.

Internal feedback. The types of feedback described thusfar in this section are external ones relating to soldier performance and use of training materials in the field. Training developers also receive internal feedback relating to institutional training from other directorates and departments in the Center/School. A large amount of such feedback is based upon informal exchange of information between personnel in DTD and other agencies, but several more formal types of internal feedback are available. Instructional departments submit requests for changes in Programs of Instruction (POI's) to training developers. Such requests include a rationale for why changes are needed, and thus provide feedback on where problems lie in training. Student critique sheets or other surveys are usually completed at the conclusion of courses, and results are available as feedback to the DTD through the DOES, as described earlier. However, several of the DTD personnel interviewed stated that they do not consider this an important form of feedback, due to concerns about the validity of students' comments. The general feeling is that students' comments are influenced more by the personality or presentation style of the instructor than by the content of the course. Training developers are more likely to take stock in comments received from instructors than in those received from students.

Several procedures followed by training developers during design of training programs and materials could be described as gathering of internal feedback. Experts on various tasks at the Center/School are often informally sought out and consulted during training development. For example, if training on a chemical task is included in a training program, local experts on such a task will be identified and asked to review the task documentation. After a training program is initially developed, it may be pilot tested through student trials or pilot teachings. Student trials involve administration of a part of the training program to a small group of students available on a temporary basis. Pilot teachings are the first administration of a new or revised training program to a regular group of students. DTD personnel are directly involved in both of these procedures and useful feedback on the adequacy of course design is gathered through observation and interviewing of students. The information gathered falls under the general rubric of feedback, although it relates to the evaluation of initial or draft products rather than finished products. DTD personnel seldom have the opportunity to observe the administration of a training program after the pilot teaching. Such observations are performed by DOES personnel, and reports of results have in the past been provided to DTD on a quarterly basis (as mentioned in a previous section, such reports are not currently being provided to DTD). Most interviewees indicated that they receive such reports and find them useful; the results of performance tests conducted during training were frequently pointed out as being especially useful information.

Summary. Several types of feedback are currently available to DTD personnel, and most of these have been described above and were previously summarized in Table 1. Other types of information are available which could be construed

as feedback, but do not merit separate discussion. For example, training developers receive comments during staffing of training programs and materials with Center/School and TRADOC agencies. However, such comments do not fit the strict definition of feedback since they relate to draft products rather than to finished products that have been used in the field. Also, personnel interviewed in DTD indicated that generally few comments are received during staffing of training materials. Specific survey and data collection forms used by the DOES to gather feedback were described in an earlier section of this report and have not been further discussed here. For example, DOES personnel administer a survey to field personnel on the use of ARTEP materials and provide the results directly to ARTEP developers in DTD. The intent of this section was to provide a general description of feedback available to serve as a basis for detailed discussion of feedback needs below.

While many of the types of feedback available to training developers are very useful, several problems are apparent in the flow of feedback information. In general, the flow of feedback appears to be informal, unsystematic, and based largely upon subjective data. Key issues and needs are identified and discussed across types of feedback below, in order to develop recommendations for improving feedback flow.

Major Feedback Needs

Lack of feedback. The most general conclusion about the feedback available to training developers is that there isn't enough of it. All 20 interviewees who indicated a need for feedback from the field also indicated that they presently receive an insufficient amount of it. They feel that they as training developers should be more directly involved in gathering feedback and should have more direct contact with personnel in the field. Changes occur in the field at a rapid pace and training developers have difficulty keeping informed of them. Problems are often surfaced through informal channels or rumors and training developers may not have sufficient time to react to them.

Interviewees did not present a consensus on how the flow of feedback should be increased. Some stated that they should visit field units and provide assistance in implementation of new training programs and materials. Others indicated that increased travel to the field is impractical and that field personnel should somehow be further encouraged to contact training developers. It might be more cost-effective to bring experienced field personnel to the Center/School than to send DTD personnel to the field. Field personnel temporarily assigned to the Center/School to attend a training course could also be further used as a feedback source than they presently are. These individuals could be surveyed or interviewed about specific areas of concern upon their arrival at the Center/School. As described earlier, these personnel currently complete a general survey during their first two weeks at the Center/School, but they are not interviewed in depth. Several interviewees expressed the opinion that feedback on training materials is rarely received from the field because these materials are in fact seldom used. The first step in gathering feedback should thus be to survey the field on the availability and use of training materials. The same argument can be made for training devices. These and other suggestions

for increasing the amount of feedback available to the DTD will be used to develop more specific recommendations in a later section of this report.

Specificity of feedback. A common observation offered by almost all interviewees is that much of the feedback available is not sufficiently detailed or specific. A general problem may be identified, but details are usually not provided which isolate the exact cause of the problem and ways to correct it. This situation exists with trip reports received from DOES and other sources and with most of the informal feedback received. If field personnel indicate that graduates of institutional training are not well trained or that training materials are not useful, training developers need further information. They need to know which specific tasks or subtasks are causing performance difficulties and which parts of training materials are not being used and why. As in the example used earlier, training developers need to know not only that lieutenants can't read maps, but which lieutenants have difficulty with which aspects of map reading. Training programs can then be redesigned to attempt to remedy the problem.

DTD personnel rely heavily upon DOES and other agencies to gather feedback for them, or upon field personnel to volunteer feedback. This leads to the provision of feedback without satisfactory detail. It is often tedious and time-consuming for training developers to go back to the source of the feedback and obtain further information. One solution to this problem would be for these personnel to be directly involved in the original gathering of feedback. Further details could then be gathered directly from the feedback source in one operation. Another solution would be to increase the coordination between those who need the feedback in the DTD and those who gather it in the DOES. DTD personnel have the opportunity to submit specific questions to DOES personnel before field units are visited, but this coordination is apparently not sufficient. Training developers may not know what questions to ask, since they have not received previous feedback as to what the primary concerns of the field are. Interviewees indicated that in the past they have not received answers to questions submitted within the needed time frame or at all. This perceived lack of response does not encourage submission of future questions. Even if DOES personnel do ask questions developed by DTD personnel in the field, they may not have sufficient experience with the particular document or device being addressed to get the needed details by asking appropriate follow-on questions. The only solution to this dilemma would be for training developers to accompany training evaluators on visits to field units.

Validity of feedback. Several of the training developers interviewed expressed concerns about whether the information they receive as feedback is valid and reliable. It is frequently difficult to determine how representative feedback is of the situation in the field as a whole. For example, a problem with a particular document may be identified through comments in a trip report or through informal means, such as a phone call from an officer in the field or a comment from an NCO newly assigned to the DTD. Is this problem widespread throughout field units or does it represent the experiences of one individual

in just one unit? There is at present no structured way to answer this question. When a problem is identified, methods are needed to pursue it in future collection of feedback in order to determine its extent. Clear criteria should be established as to which and how many personnel should be surveyed or interviewed during field visits, and as to how many times a problem should surface before it is considered severe enough to require action. Formal and informal means of feedback collection should be coordinated so that informal feedback provides input into areas to be further pursued by more formal methods.

Much of the feedback presently received by training developers is based upon subjective opinions of personnel in the field. This is true of information gathered through trip reports, CODAP surveys, and informal methods. Many interviewees expressed concern with the validity of such information and indicated a need for more feedback based upon performance testing and observation of field performance. However, several of them also expressed reservations about the validity of field observations, based on the feeling that field units only let you see what they want you to see. Few performance test results are presently available, and fewer will be available in the near future. SQT results and results of tests given during institutional training represent the only performance results available as feedback at present. The hands-on performance test portion of the SQT is scheduled to go by the wayside in the next few months, so no performance results will be available as external feedback at that time. All these facts make it difficult to alleviate training developers' concerns about the validity of feedback.

The only realistic way to increase the validity of feedback is to base it further upon observations in the field. Observers must be trained to make thorough and objective observations which are not unduly influenced by opinions and interpretations. Observers should also present themselves as assistants and facilitators to the field, rather than as evaluators. Useful feedback can then be gathered through observations. The only other way to increase the availability of valid feedback would be to increase the performance testing of field personnel. This alternative is considered unrealistic, since the Army is currently moving away from the testing of individual skills in the field. However, if the validity of feedback is ever to be maximized, it will have to be done through performance testing.

Timeliness of feedback. Another major problem that surfaced during the interviews is that many types of feedback are not timely. By the time that information is received, the situation in the field may have changed and it may be too late for training developers to react. Weeks or even months may go by before information is summarized in trip reports and distributed to those who need it. One interviewee stated that it has in the past taken as long as eight months to receive answers to questions asked in the field through the DOES. In this time frame the question designer may have been transferred or may no longer have need for the feedback, since he or she was required to complete actions without it. CODAP surveys of enlisted tasks within a particular MOS are conducted every third year, and surveys of officers' tasks have thusfar been one-time special exercises. Task analyses can thus be based

on information that is as much as three years old. Given the rapidly changing state of technology in today's Army, training materials may be out-of-date when they are developed. Item analyses of SQT results are another example of untimely feedback. These analyses have in the past not been received in time to be used in development of the next iteration of tests.

If, as suggested earlier, training developers were more directly involved in the collection of feedback, its timeliness should improve. Direct contact with the field would allow training developers to determine whether the information they are using is current. More frequent administration of CODAP surveys would also provide more up-to-date information to training developers. If this is not possible, training developers should be provided resources to visit the field themselves and supplement CODAP information as needed. Feedback will not be useful unless steps such as these are taken to improve its timeliness.

Continuity of feedback. Several interviewees made the comment that feedback needs to be more continuous than it presently is. An example of the non-continuity of feedback is the administration of CODAP surveys discussed above. These surveys are conducted every three years and no updated information is gathered between administrations. This leads to the lack of timely information discussed above, but problems with the continuity of feedback are more extensive than that. Different types of feedback are often collected in isolation and are not integrated with other types. For example, if a problem in the field is noted in a trip report or in informal feedback, it should be further pursued in future field visits and interviews. At present there is no system for collating and integrating feedback and determining what its major implications are. No one person or group at the Center/School integrates feedback previously gathered from all sources and determines what issues should be addressed in future collections of feedback. If a problem is identified during feedback, there is no mechanism to follow it up and insure that it is solved. Much of this situation is due to a lack of capability to analyze and maintain feedback information over time. This problem is further discussed below.

Analysis and management of feedback. DTD personnel presently have no automated capability to analyze and maintain the feedback they receive. In some cases other agencies perform a descriptive analysis of data before providing them to the DTD. For example, computer print-outs of descriptive analyses of CODAP and SQT results are available. But in other cases, such as data gathered during field visits or through some of the surveys administered by DOES personnel, the only available method of analysis is by hand. This is a tedious process and the result is that data are sometimes not thoroughly analyzed and used. For example, completed surveys are sometimes glanced at and thrown in a file drawer without ever being analyzed. The lack of an automated data storage and retrieval capability leads to lack of capability to establish trends in feedback over time. Different types of feedback are thus not used in an integrated and continuous fashion, as was discussed above.

If procedures are developed to increase the flow of feedback to training developers, procedures must simultaneously be developed to analyze and maintain the data acquired. An automated system is needed which can be jointly accessed by

collectors of feedback in the DOES and users in the DTD. Existing data management packages can probably be modified for this purpose. But several decisions about system design need to be made, such as what data are to be entered into the system, how data are to be displayed in a simple, useful manner, and what criteria should be established to determine when data indicate a significant problem in the field. Many of the problems with feedback discussed in this paper cannot be solved without development of an appropriate data analysis and management system.

Flow of feedback. A final problem with feedback, and one which can be directly related to lack of a data management system, is the fact that feedback is not always available to those who need it. Several of the training developers interviewed expressed the suspicion that they do not receive all the available feedback which might be of interest to them. The circulation of trip reports appears to be rather spotty. Some interviewees indicated that they see DOES trip reports regularly, while others indicated that they had not seen one in over a year. SQT item analyses are available to SQT developers, but other training developers indicated that these results are not readily available to them. Results of surveys on the use of particular training materials have in the past been available to writers of the materials but not to task analysts and others involved in the production of the materials. So feedback does not always flow to all those who feel a need for it.

Several interviewees attributed feedback flow problems to the current organizational structure of the DTD. At present, the task analysts, writers of training materials, and producers of final copies of training materials are organized into different divisions of the DTD. And the evaluators of training materials are located in another directorate, the DOES. Such an organizational structure sometimes leads to communications problems. For example, task analysts who determine what tasks are to be taught in the institution do not always have continuous interaction with personnel who develop the training programs for these tasks. One suggestion which was offered by two interviewees to alleviate this problem is to reorganize the DTD by MOS. A given group would then have total responsibility for developing training for that MOS, from task analysis through training evaluation. It is not within the purview of this paper to suggest a total reorganization of the DTD. However, some action is needed to increase the interaction among the divisions of the DTD and between the DTD and the DOES.

Summary. The major problems with feedback identified by the DTD personnel interviewed are that there is not enough of it, it is often not specific or timely enough, it does not flow to all those who need it in a continuous fashion, its validity is frequently undetermined, and there are no efficient ways to analyze and manage it. The key to meeting the feedback needs of DTD personnel appears to be the regular collection of valid objective data which can be analyzed and maintained so that they are easily accessible to all potential users. Meeting this goal will require the expenditure of more resources than are now devoted to the collection and management of feedback. In the next section the conclusions reached from interviews of DTD and DOES personnel are integrated and more specific recommendations are developed for efficient use of feedback resources.

SECTION V

CONCLUSIONS AND RECOMMENDATIONS

While some useful feedback is presently available to training developers and evaluators, the interview results discussed in the previous two sections suggest that there are many ways in which the flow of feedback information needs to be improved. Conclusions about present feedback methods and procedures are discussed in this section, along with recommendations on how to improve them. The recommendations are general ones which should apply to any Center/School, and not just to the one in which interviews were conducted. While it is necessary to discuss the recommendations separately here, they are interrelated and should be implemented in an integrated fashion.

Feedback Needs

The most general conclusion that can be reached about the present feedback system is that more feedback is needed. This conclusion is based primarily upon the perspective of training developers in the DTD, who almost unanimously stated that they are not getting all the feedback they need for improving training programs and materials. Training evaluators in the DOES did not perceive a widespread need for more feedback, and some of them indicated that they are already receiving more feedback than they can handle. The users of feedback want more of it and the primary providers of feedback feel that they are providing all they can, given their current resources. Possible solutions to this dilemma include involving training developers more directly in the collection of feedback and increasing the coordination between training developers and evaluators. These and other approaches to increasing the feedback available are discussed later in this section.

The paucity of feedback available to training developers in some areas indicates that they are correct in their assertion that more feedback is needed. In some cases feedback is needed where it is not currently available, and in other cases feedback is already available, but more specific information is needed. The types of feedback needed that are not currently available include objective performance results and information on the use of training materials. Several of the training developers interviewed stated a need for more objective performance results, such as results of hands-on tests of individual skills and observations of unit exercises. Few such data are currently available; the only types identified during the interviews were results of the hands-on portion of SQT's and results of institutional testing included in quarterly reports prepared by the DOES. Hands-on SQT results will likely soon no longer be available, and indications are that institutional test results will no longer be reported by the DOES in a regular formal fashion. Training developers will thus be receiving fewer objective performance results rather than more. Possible ways to reverse this trend will be addressed in a later discussion of the validity of feedback.

Another pressing need for feedback that is not currently being satisfied is the requirement for more feedback from the field on the availability and use of training materials. Nearly all DTD personnel interviewed indicated a need

for increased feedback on the use of training materials they produce. Interviews with DOES personnel indicated that, while some of them are aware of this need, very little has been done to address it. As a first step, DTD personnel with DOES assistance could devise a generic set of questions that could be used to address a wide variety of training materials. From this pool of questions, training developers could select and modify appropriate questions to determine the availability and use of specific training materials in the field. As mentioned earlier, the scarcity of feedback on training materials may be due to the fact that they are not received or used in the field. These general issues should be addressed first, followed by more specific questions on the design of training materials. In this way, training developers would be more likely to obtain the information they need to revise or upgrade the training materials they produce.

The biggest problem with the feedback currently available from training evaluators and other sources is that it tends to be too general for training developers' needs. Statements to the effect that lieutenants cannot read maps or mechanics cannot troubleshoot are worth very little to training developers. To change the training given at the Center/School in map reading or troubleshooting, more information is needed. As discussed earlier, training developers need to know which soldiers are having difficulty with which aspects of the task of concern. They also need to know the size of the sample and the methods used in data collection, so that the extent of the problem can be determined.

There are several ways in which the specificity of feedback can be increased, all of which involve increasing the interaction between DTD and DOES personnel. So that more specific questions might be developed, DOES personnel should "extensively" coordinate their data collection plans and forms with DTD personnel before making field trips. The inclusion of DTD personnel in data collection teams would make available knowledgeable personnel who could ask specific follow-on questions during interviews. A more continuous feedback system than presently exists would provide for maintenance of data across field visits. General problem areas uncovered in one visit could then be addressed in more specific detail in later visits. These possibilities are further addressed in the discussion below of coordination between training developers amd evaluators.

Coordination Between Training Developers And Evaluators

A properly functioning feedback system can be described as a continuous loop. When training developers and evaluators are not the same people, as is the case in most TRADOC Centers/Schools, continuous coordination is required along this loop. Developers of training programs and materials should provide input to training evaluators as to what feedback is needed. The evaluators should then collect the needed information and provide it to the developers, along with at least preliminary analysis and interpretation of the data. Developers should then inform evaluators as to what was done with the feedback, what changes were made in training programs and materials, and what new feedback is needed. Continuance of this cycle should insure that training developers receive the feedback that they need. Unfortunately, the interview

results indicate that the feedback process does not operate through a continuous cycle in the real world.

The interviews revealed many examples of the need for increased coordination between training developers and evaluators. DTD personnel appeared to be unaware of many of the types of feedback that are collected by the DOES and several of them expressed a hesitancy to accept as valid any data with which they were not involved in collecting. DOES personnel appeared to be unaware of the types of feedback needed by the DTD, and in many cases they did not know how, or even if, DTD used the feedback that they provided. As a more specific example, DOES personnel obtain subjective estimates of task performance proficiency, frequency, and criticality during graduate/supervisor surveys administered in the field and feedback seminars conducted at the Center/School. DTD personnel who have a need for such data did not indicate an awareness of what the DOES collects, and they sometimes visit field units to collect similar data themselves. As a result, the similar sorts of data collected through graduate/supervisor surveys, feedback seminars, visits of DTD personnel to the field, and CODAP surveys are not integrated.

There are several ways in which the coordination between training developers and evaluators can be increased. DOES personnel should increase their efforts to involve the DTD in all phases of the feedback process, particularly in the development of questions and methods to be used in obtaining data from the field. As was suggested earlier, DTD personnel could develop pools of questions for assessing the availability and use of training materials. The DTD or instructional departments could develop pools of questions for other purposes, such as assessing the performance of soldiers or the distribution and use of training devices. As soon as the DOES has a tentative schedule for the units to be visited during a given quarter, the schedule should be shared with the DTD, so that DTD personnel have ample time to add non-standard items of current interest to the data collection plan. DOES personnel presently coordinate their field visits with the DTD and other departments, but the present informal system of sending a request to the DTD for questions just prior to a field visit appears to be inadequate. If DTD personnel have not received previous feedback from the DOES, they may not know the appropriate questions to ask. The development of pools of questions as suggested above might help here, since questions could be selected from these pools rather than being developed anew before each set of field visits. It may be necessary for the DOES to establish points of contact at the action officer level in the DTD and departments through which field visitations would be announced, data collection needs would be transmitted, and responses to these needs would be returned. DOES personnel could also meet with DTD and departmental personnel prior to a visit to map out what they expect to accomplish during the visit. This involvement of training developers in data collection could go so far as to include these personnel in teams visiting the field; this possibility is further discussed below. Meetings between DOES and DTD personnel following as well as prior to a visit should also be beneficial.

To insure that feedback is useful to those to whom it is provided, both training evaluators and developers should take steps to close the feedback loop. The preceding paragraph discussed the necessity for training developers'

input into the design of feedback questions and methods. In this way the data needed by training developers are more likely to be gathered. The DOES must then provide feedback to the DTD on each question asked and on reasons why any requested data were not collected. Where specific problems are identified during an on-site visit, training evaluators should provide recommendations on how these problems might be addressed. Although such recommendations need not be binding upon training developers, these personnel should always inform the training evaluators of actions taken to address the problems identified. If the problem is not adequately documented to enable the training developer to address it, the training evaluator should be so advised. In these ways useful feedback can be obtained on a continuing basis. An example of a feedback system which normally provides for periodic coordination between training developers and evaluators is the Missile and Munitions Evaluation conducted by the Missile and Munitions Center/School (MAME, 1982).

Field Contacts For Training Developers

Training developers develop their products in the relative isolation of the Center/School. While some training developers have gained extensive field experience in previous assignments, their knowledge is rapidly outdated by changes in doctrine, equipment, and the threat. Some training developers indicated during interviews that they must constantly struggle to keep up with changes in the field. To provide products that are responsive to the field's needs, DTD personnel must increase and maintain their direct contacts with field personnel. Two approaches to this are suggested below.

Interviews with field personnel at the Center/School. Perhaps the most available and underutilized resource for obtaining external feedback is field personnel who return to the Center/School for training in advanced NCO or officer courses. With their experiences in the field still fresh in their minds and the distractions of their field duties temporarily removed, they can provide much useful feedback to the Center/School. These soldiers should be interviewed individually by DOES and DTD personnel shortly after their arrival at the Center/School. Structured interview formats should be used in sessions requiring no more than an hour of the interviewee's time. Interviews could cover practically any subject matter than can be asked of the same soldiers in the field and need not be restricted to perceptions of graduate performance, as is presently done. In fact, it might be instructive to ask them the same questions that are asked of their counterparts in the field to determine if the feedback obtained is comparable. If the information obtained from soldiers returning to the Center/School varies little from that obtained in the field, then the number of personnel interviewed during field visits could be reduced. Interviews conducted with field personnel at the Center/School are more convenient and less expensive than the same interviews conducted in the field. DTD personnel might also construct short questionnaires to answer specific questions of immediate concern about their products that are not addressed in field interviews or questionnaires. Administering these questionnaires to field personnel at the institution would provide quick and cost-effective feedback. Field personnel temporarily located at the Center/School are a feedback source that should be utilized more extensively.

Field visits. Another way in which contacts between training developers and field personnel could be increased would be to include training development personnel on the evaluation teams that routinely visit units in the field. Although the DOES occasionally includes personnel from other directorates/ departments on its external evaluation team, the number of times that training developers have been included is far too few. The DOES should include at least one training developer on every field visit.

Training developers should accompany DOES personnel as active observers. Although they would not be the key data collectors, the training developers might be involved in administering questionnaires, observing unit operations, and conducting interviews with lower ranking officers, NCO's, and enlisted personnel. It is important for training developers visiting field units to have a definite but flexible agenda. Prior to the trip questionnaires and structured interviews should be developed and plans made for collecting the data and making observations. Several training developers expressed concern during the interviews that they would be allowed to see only what units want them to see in the field. Data collectors should be trained to get around this problem by looking for objective indicators of unit performance. Much can be learned through objective structured observation of unit activities; this point is further addressed in a discussion of the validity of feedback below.

In addition to providing badly needed contact with field personnel, there are other advantages to including training developers on field visits. Training developers are likely to have more confidence in feedback that they themselves have been involved in collecting. They will be more motivated to develop methods for obtaining the kinds of feedback they need, since they know that the needed information will be collected. They may also come to better appreciate the difficulty of obtaining useful feedback from the field. Also, as suggested earlier, training developers might be able to develop detailed follow-up questions during interviews in the field, due to their direct experience with the products being evaluated.

There are, however, at least two potential problems with sending training developers to collect feedback in the field. The first is the additional cost of sending additional people to the field. However, this procedure might save money in the long run if it leads to improved training materials and better trained soldiers. It might also lessen the number of training evaluators visiting the field and reduce the need for training developers to conduct separate visits on their own. The second problem is that training developers might introduce bias into the data they collect. They might inadvertently, or purposely, make their products (i.e., training materials and trained soldiers) look better than they actually are by asking questions in a biased manner or by not being objective during interviews. For this reason training developers should receive instruction in objective methods of data collection before they visit the field, and the data they collect should be used only internally for identifying problems and correcting deficiencies and not for more general evaluative purposes.

Validity Of Feedback

Subjective versus objective measures. Much of the feedback presently available to training developers is subjective in that it is based on the perceptions and opinions of unit personnel. Among the more subjective data are responses to student questionnaires, ratings of graduate performance, CODAP survey results, and professionalism survey results. If subjective measures like these are going to be used, then their accuracy or validity must be demonstrated by comparing them with more objective measures, such as results of tests and observations. If the subjective measures do not compare favorably with the objective ones, then the subjective measures must be replaced by more accurate ones.

Ratings and other estimates of graduate proficiency on specific tasks, such as those collected by the DOES and in CODAP surveys, have not been generally shown to be accurate when compared with more objective performance measures (Burnside, 1982). Therefore, DOES personnel should compare their subjective measures of task performance with the results of objective performance measures such as hands-on tests. Unless a significant relationship can be demonstrated between performance estimates and hands-on performance, the former measures will have to be abandoned for more accurate but expensive performance measures.

The accuracy of estimates of task criticality and frequency of performance as collected by the DOES and in CODAP surveys has also not been demonstrated. Burnside (1982) found few studies supporting the accuracy of either frequency or criticality estimates. Estimates of time spent on specific tasks and frequency of performing these tasks are generally inflated, leading to the necessity to use relative rather than absolute judgments. To determine how accurate subjective measures of frequency of task performance are, the DOES should observe the frequency of performance of a selected set of tasks in a field setting and compare this objective measure of frequency with frequency estimates. Estimates of task criticality are notoriously unreliable. If task criticality estimates are to be used at all, special techniques may be required to obtain them. When soldiers are asked to rate criticality, almost all tasks are rated at the high end of the scale. That is, almost all tasks are considered critical. This problem can be overcome by forcing soldiers to rank order the tasks from most to least critical, but this becomes quite difficult as the number of tasks increases. Burnside (1982) discussed another method for obtaining criticality estimates whereby the criticality of each task is compared with that of each and every other task in pairs. Although this paired comparison technique has been shown to increase the reliability of criticality estimates, it becomes impractical when the number of tasks is more than six or eight. Because the reliability of criticality estimates is typically low, their use is not recommended for feedback purposes unless their reliability can be improved by using special data collection techniques.

To be useful, measures of training effectiveness must provide detailed, accurate information so that deficiencies in the training can be identified and corrected. Because their primary goal is not to evaluate training, students may

not make the detailed observations needed for evaluating and modifying training. Students' responses to questionnaires about the effectiveness of training may consist primarily of gross judgments regarding the training they received. This becomes more likely when the questionnaires ask students to rate the instruction or instructor on each of several dimensions. When student questionnaires require such ratings, they are subject to all the problems associated with ratings mentioned earlier. In addition, responses to student questionnaires may be affected disproportionately by the style and charisma of the instructor. For these reasons student questionnaires should not be used as the primary measure of training effectiveness. Generally training effectiveness is more accurately measured by sending carefully selected, well-trained observers to objectively record their observations of training on structured observation forms. The DOES presently sends observers to inspect institutional training but structured observation forms are not always used, and those forms that are used depend too heavily on subjective assessment of the training. Objective observation of training coupled with rigorous end-of-block tests is recommended as the best way to evaluate training. Both training developers and evaluators should apply this approach in both institutional and unit training. Training evaluations should be conducted in accordance with guidelines provided in ARI Research Products 81-15 through 81-18 (Kristiansen, 1981; Kristiansen and Witmer, 1982a; Kristiansen and Witmer, 1982b; Witmer, 1981).

Most of the items on the professionalism survey call for subjective responses. Almost every item calls for either an attitude, an opinion, or an evaluation of some aspect of the Army as a profession. The purpose of the professionalism survey is to identify attitudes or opinions that may relate to personnel problems such as officer or NCO attrition. However, the DOES has made no effort to compare survey results with actual attrition rates, and, as best as could be determined, the validity of professionalism surveys has never been established. Furthermore, DOES personnel interviewed indicated that these surveys are of little value in identifying personnel problems. Unless the validity and utility of professionalism or similar surveys can be demonstrated, they should not be used for feedback purposes.

Even relatively objective measures such as tests and objective questionnaires do not always provide valid feedback. For example, tests may be administered in which the soldiers are given assistance or are not tested to the correct standards. On questionnaires, the questions may be worded such that the respondent is biased toward giving the answer that the questioner prefers. Questions asked during interviews may also be worded so that the interviewee gives the desired answer, and interviewers may influence the interviewee by the way that they react to the answers provided. To increase the validity of data gathered through questionnaires and interviews, DOES and DTD personnel should carefully develop the questions to be asked in advance, paying close attention to the wording of the questions. Questions should be aimed at obtaining factual information rather than attitudes or opinions, and should only be asked of those soldiers who are likely to have the relevant experiences to provide the information requested. Questionnaires and structured interviews developed for feedback purposes must not only provide information that is valid but also information that is useful. Therefore, the questionnaire or interview developer must

take special care to include only those questions that yield information having a clearly identified use for a specific directorate/department. For additional guidance in constructing questionnaires and structured interviews see Dyer, Josephine, Wright, and Yudowitch (1976) or Kristiansen and Witmer (1982a, Appendix B).

Presently, feedback to the Center/School is based too much on subjective measures and not enough on objective ones. While interviews and questionnaires can provide valid, useful information when constructed properly, some of the questions now used by the DOES and the lack of structure in the interviews invite subjective responses. Along with efforts to improve questionnaires and interviews, training developers and evaluators should increase the use of more objective methods, such as observation and hands-on testing. Although these methods are relatively costly and time-consuming, their application to a small sample of units may very well yield more useful feedback than would subjective measures gathered from every unit in the Army.

Criteria for samples. Maintaining the objectivity of feedback does not start or end with the collection of data. To insure that the data are representative of the units visited and field units in general, the sample of soldiers from whom the data are obtained must be carefully selected. Care must be taken to select soldiers of different ranks and avoid getting all feedback from the senior members of units. At the present time, the DOES makes little or no effort to specify the size or composition of the sample to insure that it is representative. The DOES's failure to specify clearly in advance the sample from which data will be obtained not only adversely affects the generalizability of the data, but also reduces objectivity in decision-making.

Several of the DOES personnel interviewed expressed difficulty in deciding how many times a problem should be mentioned by field personnel before it could be considered serious enough to warrant taking some action. This difficulty arose because the DOES has not established decision-making criteria for deciding when to act. Without such criteria the decision to include a problem as feedback to elements of the Center/School is a subjective decision. DTD personnel interviewed indicated an awareness of this problem and several of them expressed a hesitancy to accept feedback from the DOES as valid, since they did not know the extent of problems identified. Decision-making criteria are essential to maintaining the objectivity of feedback and they should be developed by the DOES. But to develop these criteria, DOES personnel need to know the size and composition of the sample upon which the decision will be based, the questions to be asked of the sample, and the kinds of responses to each question that indicate problems which can be solved by the Center/School. While the use of decision-making criteria does not guarantee correct decisions will be made, it does insure that consistent, objective decisions that do not vary from one decision-maker to another will be made.

Data Analysis And Management System

Neither the DOES nor the DTD addressed in this study has an adequate system for analyzing, maintaining, or distributing the feedback that they get. Although

both the DOES and the DTD have access to computer facilities in other locations at the Center/School, neither has a computer on-site that can be used for storage and analysis of feedback data. The lack of an on-site computer facility tends to discourage thorough analysis of the data, since the analysis must either be performed by hand or through a remote computer terminal. Presently DOES and DTD personnel store the feedback they receive in file drawers throughout their offices. This method of storing data quickly becomes cumbersome with different data in different locations and old data shoved to the back of the file where it remains untouched until it is destroyed to make room for new data. As a result, trends in feedback over time are not established and data which may be similar are rarely integrated or compared. This leads to a lack of continuity in feedback, as was discussed earlier.

The DOES, as the primary data collector and feedback provider at the Center/School, needs an on-site computer for analyzing and maintaining the data collected. To obtain maximum benefit from the computer, procedures must be developed for analyzing and maintaining the data acquired. Existing data management and analysis packages can be used for this purpose to a certain extent. These packages may need to be modified or supplemented by other techniques to fit the particular needs of the DOES or those to whom the DOES provides feedback. Prototype data analysis and management techniques should be developed based upon existing data and expanded as more data become available. These techniques may include objective methods for establishing and updating long-term data trends, procedures for displaying complex data in simple pictorial formats, decision-making sub-routines based on objective criteria for automatically identifying critical problems, and methods to monitor suggested revisions in Center/School training in order to determine their effects.

Care should be taken to insure that the computer does not become just a depository for large pools of unvalidated subjective data. For example, CODAP data are highly subjective and may be out-of-date by the time they are available. The Army produces a number of data files, some of which are based on relatively objective information and others that consist primarily of subjective data. The DOES should maintain awareness of the methods used to collect various types of feedback data. Data obtained by objective methods such as systematic observation or hands-on tests are usually reliable and can be entered into the data base without further verification. Subjective data, on the other hand, should always be checked by comparing it to data obtained via more objective methods. For example, supervisors' appraisals of subordinates' performance on specific tasks are not acceptable for entry in the data base unless these appraisals can be shown to strongly relate to measures of hands-on performance. Similarly responses to student questionnaires may not accurately measure training effectiveness, and should not be included in the data base unless they are shown to relate to systematic observation or other objective measures of training effectiveness.

Feedback data stored in the computer should be readily accessible by the DTD and other training developers as well as by the DOES. Ideally DTD and the instructional departments would have easy access to these data through terminals located at the DTD or the instructional departments. An appropriate command

from a terminal to the computer would create a printout of the various types of data (e.g., test results, responses to questionnaires) available in the data base and the options and procedures available for analyzing or displaying them. From this list the user could select the type of data and method of analysis to be employed. Subsequent instructions could be used to select the time frame and soldier population of interest. With such a system the user could quickly retrieve the data needed.

The DOES computer could be used to quickly generate tables, graphs, statistics, and summaries of major problems observed within a given time frame for inclusion in monthly or quarterly reports. This would decrease the amount of time required by DOES personnel to produce a report, thereby increasing the time available for collecting data or conducting special studies. These reports could be stored permanently in the computer and could be readily accessible to users through terminals. Users could also create their own reports for special purposes by selecting the appropriate analysis options and obtaining a printout through a terminal. Direct access to feedback data and reports based on these data would greatly speed and increase the flow of feedback from training evaluators to training developers. It would also allow feedback to be tailored to the needs of users, resulting in closing of the continuous feedback loop discussed earlier.

Summary

Training developers are not getting all the feedback they need for improving training programs and materials. Additional feedback is needed on use of training materials and more specific feedback is needed on graduate performance, including information identifying which tasks and parts of tasks soldiers have difficulty performing and the reasons for poor performance. In providing this feedback it is important for training evaluators to specify the sample and time frame from which the data were obtained and the methods used for obtaining the data.

One problem with the flow of feedback is the lack of coordination between training developers and evaluators. Training developers need to become more involved in the development of questions used in data collection instruments and in the data collection process itself. Feedback sources available at the Center/School should be utilized more extensively, and training developers should accompany training evaluators on visits to field units. Training developers and evaluators should interact continuously in order to close the feedback loop.

Presently both the DOES and the DTD are relying too heavily on subjective data, such as proficiency, frequency, and criticality estimates. Subjective data should not be used unless their validity can be established. More emphasis should be placed upon relatively objective measures such as observations and hands-on tests. Questionnaires and interviews should be upgraded by carefully wording each question and weeding out questions that elicit unreliable subjective responses. The sample to whom the questionnaires and interviews are to be administered must be specified in advance and carefully selected.

Objective procedures utilizing set criteria should be used for interpreting data and identifying significant problems, rather than the subjective methods presently used.

An automated data analysis and management system is needed to insure that data collected for feedback purposes are thoroughly analyzed, maintained over time, and efficiently distributed to those who need them. This system should be physically located at the DOES facilities, but it should be accessible via terminals to the DTD and other training developers. With the proper choice of data analysis and management packages, an automated data management system could perform many useful functions, including identification of trends, automated decision-making, and the efficient generation and distribution of reports. The availability of valid data in such a system will go a long way toward making feedback the continuous interactive process that it should be.

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APPENDIX A

INTERVIEW FORM

INFORMATION FEEDBACK NEEDS OF CENTER/SCHOOL
DIRECTORATES/DEPARTMENTS

INTERVIEW WORKSHEET 1

Dir/Dept_____ Div/Br_____

Interviewee_____ Date_____

INTRODUCTION

1. Purpose of project
   a. Design of feedback system for Centers/Schools.
   b. Feedback on both soldier performance and use of training methods.
   c. Interviewing division/branch chiefs in DTD, OAFMS, and other agencies as needed.
2. Information flow schematic
   a. Sources
   b. Division/branch processing of information
   c. Feedback from users
3. Conduct of interview
   a. Organized by type of information
   b. Not an evaluation or audit of anyone's job
   c. Want opportunity to come back later

INITIAL INQUIRY

What types of information does your division/branch currently get (collect or receive) that relates to performance of soldiers or use of training materials in the field?

Soldier Performance	Use of Materials

INFORMATION FEEDBACK NEEDS OF CENTER/SCHOOL
DIRECTORATES/DEPARTMENTS

INTERVIEW WORKSHEET 2

Dir/Dept_____ Div/Br_____

Item_____

1. In what form do you get this information? Is it useful and reliable in this form?

2. From where do you get it? Who in your division/branch gets it?

3. What's done with the information in your division/branch? (Is its form changed? Is it analyzed or otherwise processed? Is it filed? Where? What conclusions and recommendations are developed? What reports are generated?)

4. Where are the results of your processing of the information sent? What feedback do you receive from users of the information? If more feedback is needed, what kind?

5. What document or regulation prescribes the use of this information?

Dir/Dept_____ Div/Br_____

Item_____

Additional Comments (indicate whether comments are general or keyed to questions on previous page):

INFORMATION FEEDBACK NEEDS OF CENTER/SCHOOL
DIRECTORATES/DEPARTMENTS

INTERVIEW WORKSHEET 3

Dir/Dept_____ Div/Br_____

CLOSING INQUIRY

What other types of feedback on soldier performance or use of materials do you need that you don't currently get? In what ways can feedback from the field be improved?

APPENDIX B

TRAINING INSPECTION REPORT

DATA COLLECTION FORM

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TRAINING INSPECTION REPORT

Unit _____

Location _____

Date _____

Scheduled Start Time _____

Scheduled End Time _____

Time Began _____

Time Ended _____

Subject/Task _____

_____

Trainer _____

Personnel Present for Training _____

_____

Personnel Absent from Training _____

_____

Time Evaluator Arrived _____

Name of Evaluator/Evaluators _____

_____

Name of Person Outbriefed _____

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	YES	NO
1. Did the trainer give a diagnostic examination prior to the instruction?		
2. If so, how many GOs _____, NO GOs _____.		
3. What was the standard for a GO? _____		
4. Did the diagnostic exam match the training and the post test?		
5. Did the trainer have the lesson plan prepared?		
6. Was the lesson plan IAW the soldiers manual task, condition, and standards?		
7. Are the tasks, conditions, and standards correct?		
8. Were the tasks, conditions, and standards explained adequately to the student?		
9. Did the trainer give the reason for the subject?		
10. Was the "need to know" emphasized?		
11. Did the training match the training objective?		
12. Did the trainer display adequate knowledge of the subject matter?		
13. Did the trainer give all necessary information?		
14. Did the trainer present any unnecessary information?		
15. Did the trainer use understandable words?		
16. Did the trainer demonstrate how to perform the tasks correctly?		

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	YES	NO
17. Were the students afforded time for practical exercises?		
18. Did the students complete the task correctly, at least once, without coaching or assistance?		
19. Was there enough time for hands on training/practice?		
20. Was immediate feedback given to the students after the practice?		
21. Did the students actively participate?		
22. Were the students encouraged to ask questions?		
23. Did the trainer show interest in helping the soldier to learn?		
24. Was the training site well organized?		
25. Did the trainer arrange the training so all could see and hear?		
26. Were all required support materials and personnel present and on time?		
27. Was all support equipment operational?		
28. Were the training materials and handouts called for used? If not, why not?		
29. Were training aids introduced and explained as part of the instruction? If not, why not?		
30. Did the students have access to the equipment/training aids? If not, why not?		
31. What was the ratio of instructors/AIs per student? _____ Was it adequate for the subject?		

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	YES	NO
32. What was the ratio of equipment/training aids per student? _____ Was it adequate for the subject		
33. Were the AIs used effectively?		
34. Did the AIs display adequate knowledge of the subject matter?		
35. Was faulty performance of either the instructor or student identified and corrected?		
36. Did the soldiers receive a test on the subject?		
37. How long did the test occur after the completion of training? _____		
38. Was the test as close as possible to the job environment?		
39. Did the training objective and the training match the test?		
40. Were the pass/fail standards clear and correct?		
41. Were the pass/fail standards the same for all students?		
42. Were the specified standards applied?		
43. Were the testers the same personnel as the instructors?		
44. Were the students given immediate feedback on their performance after testing?		
45. Were any training distractors evident?		

a. Noise
b. Interruptions
c. Lighting
d. Temperature
e. Time
f. Equipment
g. Training Area/Facility

	YES	NO
46. Was all student training time used effectively? If no, why not?		
47. Did the trainer provide a summary of tasks, conditions, and standards?		
48. Was concurrent training utilized during the block of instruction?		
49. If concurrent training was utilized, was it effective?		

50. If test given:

Number Tested _____

Number GOs _____

Number NO GOs _____

Number Retested _____

Number of GOs on Retest _____

REMARKS SECTION:

RECOMMENDATIONS:

EFFECTIVENESS OF TRAINING:

_____ Accomplished the training objective

_____ Did not accomplish the training objective

Evaluators Signatures